

V. REMARKS

Claims 1, 4-6, 8-11, 13 and 17-20 are rejected under 35 USC 103 (a) as being unpatentable Mathuni (U.S. Patent No. 5,945,351) in view of Sato (U.S. Patent No. 5,993,547). Claims 12 and 20 are rejected under 35 USC 103 (a) as being unpatentable Mathuni in view of Sato as applied to claims 1, 4-6, 8-11, 13 and 17-20 and further in view of Sadohara et al. (U.S. Patent Application Publication No. 2001/0032705). The rejections are respectfully traversed.

The invention mentioned in a citation (US 5,949,351: Mathuni et al) relates to "METHOD FOR ETCHING DAMAGED ZONE ON AN EDGE OF A SEMICONDUCTOR SUBSTRATE, AND ETCHING SYSTEM", and it is described that edge 14 of front side and back side of a semiconductor substrate is etched with predetermined width by using etching agent 15.

In the invention disclosed in the citation, process chamber 2 comprises a protective chamber 3 in which the etching agent 15 is to be introduced, and the semiconductor substrate disposed in the process chamber 2 is covered by the protective chamber 3 except for the edge of the semiconductor substrate to be etched. The protective chamber 3 is composed of baffles 18, 19 and outer baffles 20, 21, and a protective gas 16 is introduced into baffle plates 18, 19. Gaps 22,23, which serve to remove the protective gas 16 by suction via an evacuation device 28, are formed between the baffles 18, 19 and the outer baffles 20, 21, inside of the protective chamber 3 is filled with protective gas 16 which is introduced into the protective chamber 3, and outside of the outer baffles 20, 21 is filled with etching agent 15 respectively by sucking the protective gas 16 through the gaps 22, 23. Thereby the edge 14 of the semiconductor substrate in which is exposed to etching agent 15 being etched, is disclosed.

However, the citation does not disclose the special feature of the present invention described in amended claim 1, namely attaching a plasma supply part to a portion facing the predetermined portion for supplying plasma of a reactive gas, and

attaching a suction port to outside of the plasma supply part and the substrate for sucking an atmosphere in a vicinity of the predetermined portion. Further, controlling suction pressure of a suction port by a controlling a part which controls the suction pressure of the suction port is also not disclosed.

Then, according to the present invention, a sloped part having a predetermined shape can be formed by controlling a flow path of the plasma current flowing above outer peripheral film which is eroded by the plasma current. Furthermore, the slope degree of the sloped part can be adjusted, since the present invention has such a special feature abovementioned. Such effect as described above cannot be obtained in the cited invention.

In addition, in the present invention described in amended claim 1, diffusion of the atmosphere of the plasma into process chamber can be avoided, since plasma supply part is attached to a ceiling surface inside a film removing member and the atmosphere in a vicinity of the predetermined portion is sucked from the suction port attached to outside of the plasma supply part. Hence, the present invention does not require a protective gas inlet and the evacuation device that are disclosed in the citation.

Hence, the effects of the invention of the amended claim 1 are unique effects that cannot be obtained by the contents of the citations. Moreover, the citations do not describe nor teach any structure for realizing such effects. Hence, section 103 is not to be applied to the inventions according to the amended claim 1 and the inventions dependent on the claim 1.

In summary, it is respectfully submitted that that none of the applied art, alone or in combination, teaches or suggests the features of claim 1 as amended and discussed above. Thus, it is respectfully submitted that one of ordinary skill in the art could not combine the features of the applied art to arrive at the claimed invention because the applied art is devoid of all the features of the claimed invention. As a result, it is respectfully submitted that claimed invention is allowable over the applied art.

Withdrawal of the rejections is respectfully requested.

It is respectfully submitted that the pending claims are believed to be in condition for allowance over the prior art of record. Therefore, this Amendment is believed to be a complete response to the outstanding Office Action. Further, Applicants assert that there are also reasons other than those set forth above why the pending claims are patentable. Applicants hereby reserve the right to set forth further arguments and remarks supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers.

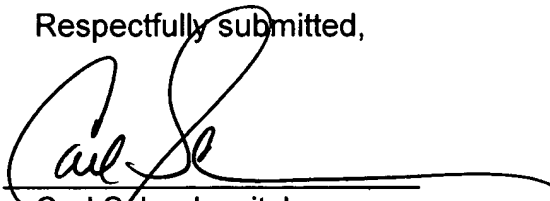
In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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Enclosure(s): Amendment Transmittal
 Petition for Extension of Time (two months)

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